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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,468	06/07/2001	Takaaki Hirai	107176-00006	6366

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EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 08/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/856,468		HIRAI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Victor S Chang		1771	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 10-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Introduction***

1. The Examiner has carefully considered Applicants' declaration and remarks filed on 6/21/2004.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn.

### ***Response to Amendment***

4. Claims 1, 3-8 and 10-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-174590 (computer translation) in view of Park (US 5475037), substantially for the reasons set forth in section 4 of Office action dated 3/4/2004, together with the following additional observations.

Applicants' statement "it was only possible to produce the prefoamed product having a crystallinity of 8.6% at the lowest, but not of lower than 8.6% when the invention disclosed in the Japanese Laid-Open Patent Publication No. 8-174590 was made." is acknowledged. Specifically, it is noted that in Example 2 of newly submitted translation of JP '590, the disclosure states that for "prepuffs ... had ... crystallinity of 8.5% ... the molded foam article was poor in appearance." (page 4, submitted translation).

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In the Remarks dated 6/21/2004, Applicants' argument "The amorphous polyester of Park et al. '039 is not applicable to the present claimed crystalline polyester because the crystalline polyester is intrinsically different from the amorphous polyester..." (pages 2-3, bridging paragraph) has been carefully considered, but is not persuasive. The Examiner notes that Applicants appear to be arguing that the Park reference is not combinable with JP '590, because JP '590 pertains to a crystalline polyester, whereas Park pertains to an amorphous polymer. The Examiner asserts that JP '590 and the Park reference are combinable, because both are directed to foamed polyester copolymer. It should be noted that there is no 100% crystalline polyester copolymer, because polyester copolymer inherently has both "amorphous" region and "crystalline" region. While crystalline region is intrinsically different from amorphous region in a polyester copolymer, the amount of "crystallinity" can be modified by the amount of co-monomer incorporated, as taught by either JP '590 (see Examples of newly submitted JP '590 translation) or Park (see Office action dated 3/4/2004, page 4). In other words, since the combined teachings of prior art points to the same co-monomer concentration (less than 15%) for the polyester copolymer, which reads on the instantly claimed invention, the Examiner repeats (Office action dated 3/4/2004, page 4) that a suitable amount of co-monomer is either anticipated, or an obvious optimization to one skilled in the art of copolymerization, motivated by the desire to obtain pre-expanded foam particles having a suitable amount of low crystallinity (not fully amorphous), so as to be able to form a molded article with a desired bulk density, as taught by JP '590.

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With respect to Applicants' argument "the molded foam products produced from the prepuffs having a crystallinity outside the range from 1% to 8% in Experiments 2 and 4 each have an unacceptable fusion ratio, flexible strength and deflection."

(Remarks, page 4, top paragraph), the Examiner repeats (see Office action dated 3/4/2004, second full paragraph) that while the experimental results confirmed that a suitable crystallinity in the pre-expanded foam particles is critical for obtaining a well fused molded foam article, it lacks unobviousness in view of the teachings of JP '590 and Park, as set forth above.

With respect to Applicants' argument "this present invention makes it possible for the first time to prepare prepuffs having a crystallinity in the range from 1% to 8%, which is therefore novel and unobvious over applied references." (Remarks, page 4), the Examiner repeats that the combined teachings of JP '590 and Park either anticipate the instant invention, or render the invention as obvious optimization, as set forth above. Applicants may wish to submit a Declaration to emphasize why this is the first time the prepuffs as claimed is possible, as the Declaration dated 6/21/2004 appears to be lacking evidentiary support for this argument.

With respect to Applicants' repeated argument that "There is no reason that a person of ordinary skill in the art would determine that a pre-expanded foam particle should have the presently claimed bulk density based on JP '590, when JP '590 explicitly teaches that the only material that has a bulk density which reads on that of the present claims is already in an expanded state." (Remarks, page 5, last full paragraph), the Examiner repeats (see Office action dated 3/4/2004, page 3) that it is

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conventional to prepare pre-expanded particles with a low bulk density in the range of 0.01 to 1.0 g/cm<sup>3</sup>, as taught by Park in Example 4, which shows a pre-expanded having a density of 27.55 kg/m<sup>3</sup>, i.e., 0.028 g/cm<sup>3</sup> (column 7, line 66). As such, a suitable density of pre-expanded foam particles is believed to be either anticipated by Park, or an obvious optimization to one skilled in the art, motivated by the desire to be able to form a molded article with a suitable bulk density. Further, the Examiner notes that Applicants' argument regarding the bulk density of material in an expanded state (molded article) appears to be misdirected, it should be noted that the bulk density of molded article is not in the claims.

With respect to Applicants' argument "the pre-expanded foam particles have a "crystallization peak temperature in the range of from 130 to 180°C." Even in the event that a person of skill in the art would happen to form a pre-expanded foam particle of the claimed bulk density ... it would not naturally follow that the pre-expanded foam particles obtained thereby would have the claimed crystallization peak temperature." (Remarks, pages 5-6, bridging paragraph), the Examiner notes that the prior art combination anticipates or render obvious the claimed invention, as set forth above, since the products are the same or made to the same, the properties of the products, such as crystallization peak temperature, are believed to be also either <sup>inherently</sup> anticipated, or <sup>provided once the article of the prior art produced.</sup> an obvious ~~optimization~~. It should be noted that where the claimed and prior art products are shown to be identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01.

***Conclusion***

**5. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**6.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*VSC*  
Victor S Chang  
Examiner  
Art Unit 1771

7/30/2004